#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization International Bureau

Organization
International Bureau

OM



### 

## (43) International Publication Date 31 March 2005 (31.03.2005)

PCT

## (10) International Publication Number WO 2005/028119 A1

(51) International Patent Classification<sup>7</sup>: B08B 03/02, F01D 25/00

B05B 07/08,

(21) International Application Number:

PCT/SE2004/001370

(22) International Filing Date:

24 September 2004 (24.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0302550-9

25 September 2003 (25.09.2003) SE

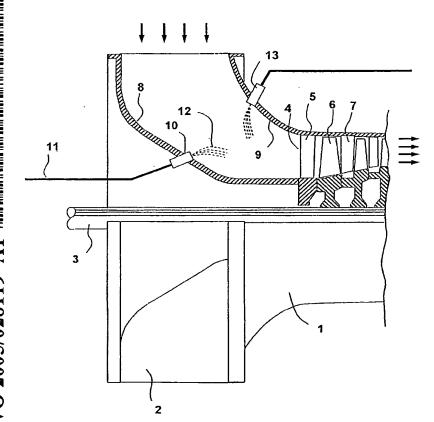
- (71) Applicant (for all designated States except US): GAS TURBINE EFFICIENCY AB [SE/SE]; P.O. Box 633, S-175 27 Järfälla (SE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ASPLUND, Peter

[SE/SE]; Berghamnsvägen 61, S-165 71 Hässelby (SE). HJERPE, Carl-Johan [SE/SE]; Sigunvägen 4, S-131 46 Nacka (SE).

- (74) Agent: DR LUDWIG BRANN PATENTBYRÅ AB; P.O. Box 17192, S-104 62 Stockholm (SE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: NOZZLE AND METHOD FOR WASHING GAS TURBINE COMPRESSORS



(57) Abstract: A nozzle (54) for cleaning a gas turbine unit (1) during operation. The invention further relates to a method for washing a gas turbine unit (1) during operation. The nozzle (54) is arranged to atomize a wash liquid in the air stream in an air intake (2) of the gas turbine unit (1) and comprises a nozzle body (40) comprising anintake end (41) for intake of said wash liquid and outlet end (55) for exit of said wash liquid. The nozzle further comprises a number of orifices (42, 46; 42, 46, 60) that are connected to the outlet end (55) and respective orifice (42, 46; 42, 46, 60) is arranged at a suitable distance from a centre axis (49) of said nozzle body (40), whereby the local density of the injected wash liquid in a desired area can be increased with preserved droplet size and thereby the efficiency of the cleaning process can be significantly improved at the same time as the risk for damaging the components in the gas turbine unit is significantly reduced.

### WO 2005/028119 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, Cl, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

### Published:

with international search report